PHILADELPHIA, MAY 11, 1878.

ORIGINAL LECTURES.

CLINICAL LECTURE

ON ACUTE RHEUMATISM WITH HEART COMPLICATIONS—DIAGNOSIS AND TREATMENT.

BY JOHN M. KEATING, M.D.,

Visiting Physician to Philadelphia Hospital; Lecturer on Diseases of Children at the University of Pennsylvania.

GENTLEMEN,—I bring to your notice this morning a case illustrative of a lesion about which I desire to make a few remarks.

This boy, who now lies suffering before you, is 14 years of age, a native of this city, and has been a school-boy. His parentage is a good one. The other evening, after play, "he became feverish," to use his own words, and after an uncomfortable night awoke in the morning a complete case of mild articular rheumatism. Two days after he was admitted to this house; and to-day is the third day of the disease. You see the boy is well nourished, and presents generally a good appearance. His condition this morning is as follows: the temperature is 102° in the axilla; the tongue is clean, rather dry; the skin is very moist, beads of perspiration standing out upon the forehead, and particularly on the upper lip; in addition he exhales an acid "perspiration odor." He lies upon his back, and complains of the least movement causing severe pain in the left knee-joint. No other joints are at present affected, though I may state that the right knee and ankle were swollen and painful when he entered the house. The knee-joint is swollen and very tender to the touch. Let us now examine the pulse and note its peculiarities. It is quick, full, and has a somewhat harder or greater resistance than normal,—a marked contrast to the soft, elastic, though still compressible pulse of health. Upon listening to the heart-sounds I find the first aortic sound attended by a murmur,—a systolic aortic murmur. The second sound is not as clear and valvular as is noticed in health, but is muffled. The murmur has certain peculiarities, of which I shall speak presently. I find, in addition, a systolic mitral murmur, rather loud, smooth, and blowing, transmitted to the left axilla. I also hear, when I put my stethoscope over the body of the heart and press it firmly, a soft rubbing, synchronous with the cardiac action, which, from its being localized and independent of the direction of the blood-current, is characterized as *pericardial.* Percussion shows us no increase in the area of cardiac dulness. The lungs are healthy. I may state that the bowels were rather costive, and that the urine is scanty and abnormally acid.

Throwing aside the question of temperature in this case,—for you see it is not too high to be compatible with life,—and bearing in mind that the joint lesion, however universal, cannot ever be fatal, let us consider the danger from the cardiac complication. Is the murmur simply a blood-murmur (so called), caused by alteration in rhythm from highly fibrinated blood or by anæmia, to disappear upon the subsidence of the attack, or to increase as the anæmia increases? or is it due to a *fresh* deposit of fibrin upon the tendons or leaflets of the heart from endocarditis? or is it an old murmur from a previous attack? Before we question our patient, let us endeavor to find out as much as we can for ourselves; for circumstances may often prevent the history of a case from being obtained. In this patient I notice that the murmur is smooth, soft, but not musical. Its time of greatest intensity is at the beginning of the first sound; it does not end in a musical hum, but stops abruptly just before the termination of the sound, when the ventricle has almost emptied itself. But the second sound also has some peculiarities not noticed in health. Physiologically it is said to be due to the return current closing the semilunar valves from aortic contraction, and is therefore distinct, sharp, and positive. Here it is not so distinct, not so clear; but the great rapidity with which the heart is working prevents our hearing any positive murmur, should one exist.

This latter fact, together with the tone of the murmur and the time of its occurrence, decides me to favor the balance on the side of a distinct heart-lesion against that of a purely hæmic murmur.

Is it a fresh lesion, or has it existed previously to this attack? It is not rough, it has not changed in note, rhythm, intensity, or beat, since the case came under obser-

vation. When the boy is quiet, and the heart-beat less frequent, the murmur is rather more indistinct; as soon as he is excited, it once more fully reappears with the same characteristics as formerly, and the complication or murmurish note of the second sound makes me conclude that it must be due to a lesion that has lasted some time, but aggravated by the febrile element in the present attack. The boy tells me that once—some twelve months ago—he had an attack similar to this, following the same cause.

From what I have said let me not mislead you into the idea that there may not be present some fresh deposit also, for it may be a question of vital importance to our patient to decide the *date* of the complication, as the treatment will be based accordingly. Endocarditis and pericarditis are the most fatal complications of acute rheumatism, the first tending to the formation of emboli, the second causing cardiac thrombosis or heart-failure. Both lesions will result in degeneration of the heart at some period of after-life that will cause death,—the former by interfering with the passage of the blood, the latter attacking the pericardial layers with plastic effusion and continually embarrassing the heart's action.

How to distinguish the fresh from the old lesion in endocarditis is, though important, difficult, and at times impossible to do. All Niemeyer says upon this subject, after dwelling upon its importance, I will quote for you:*

"The differential diagnosis is still more difficult between a recent endocarditis complicating articular rheumatism and an old valvular derangement which happens to pre-exist, especially insufficience of the mitral. Such cases are by no means rare. . . . If we have not previously seen or examined them, and if upon some fresh relapse we have a systolic blowing at the apex, the cardiac dulness extending laterally, and the second pulmonary tone being sharply accented, we must remain in doubt, unless the signs of dilatation of the right ventricle have attained such height as cannot be ascribed to acute insufficience."

Walshe, in his most excellent work, tells us, speaking of endocarditis:

"A murmur being already present, the circumstances *within itself* favorable to recency of origin are softness of blowing quality, lowness of pitch, systolic rhythm, and aortic constriction, or mitral regurgitant mechanism. The circumstances hostile to recent origin are roughness of quality, high pitch, diastolic rhythm (indeed, this is absolutely conclusive unless there be a systolic murmur at the same orifice), and seat at the tricuspid orifice. Direct mitral murmur also, I believe, is never recent.

. . . "The condition of the pulse cannot be confided in for diagnosis."

You see what difficulties we have to deal with, as a hæmic murmur may be classed under the first head, though it may differ in the point that it is usually more marked at the close of the attack, when due to spanæmia, and is more musical. From all we can gather, then, both from logical deduction as to the causation of the murmur, and from the experience of others, we may lay down the following general principles to guide us in our diagnosis, illustrated by the case before us:

Endocarditis is associated with about twenty per cent. of all the cases of general articular rheumatism, affecting those more particularly who have a number of joints involved.

It may be associated with changes in the pulse, as to fulness, throbbing, tension, quickness, etc., or these may be in no proportion to the extent of the attack; they may depend upon the fever.

When *new*, the murmur is usually associated with the cardiac systole; it is usually *rough*, particularly when the heart's action is not very rapid, though at times it is smooth. It is scarcely ever uniform: that is to say, it differs in tone, pitch, etc., with the deposit of lymph, increasing or decreasing with it, and therefore changing its characteristics at each examination. Percussion shows no increase in the size of the heart or in its position; nor does examination of the other viscera reveal anything showing a previous interference with the circulation. The apex-beat is not displaced. In old murmurs the sounds, by some, are said to be smooth, owing to the constant friction wearing down the rough deposit. They are blowing, harsh (in contradistinction to musical). This latter quality is described as rough by other authors. The murmur may at times partially disappear when the circulation is not very much excited; but when it re-

* See vol. i. page 339.

appears it presents its usual characteristics.

When the lesion has existed for some little time, percussion and inspection show some change in the shape and position of the heart. When these two conditions are combined, and a new lesion is superimposed on an old one, you will find greater difficulties to contend with in diagnosis, as there will be a combination of the symptoms that usually mark the difference.

Acute pericarditis, accompanied by pain, præcordial tenderness, excited and probably irregular cardiac action, friction-sound, and, perchance, some localized pleurisy, may be easier of diagnosis; in fact, it may be inferred when the symptoms are acute.

Concluding, therefore, that the patient before us has acute rheumatism, with the serious complication of a double valvular lesion of some months' standing,—though so slight a one as not to have changed the normal percussion dulness nor the apex-beat,—with a renewal of the inflammation of the endocardium of the aortic orifice, and at the same time slight pericarditis from the friction-sound and præcordial pain, what are the dangers, and what shall be our treatment?

First, we fear heart-clot.

Secondly, embolism or thrombosis, or the establishment of a serious chronic valvular lesion from the endocarditis.

From the pericarditis heart-clot may result from the pressure or interference with the movements of the heart; or if effusion take place in great quantity, causing sudden arrest, chronic adhesions may form, which would cause future hypertrophy, then dilatation, or disease of the heart-structure, myocarditis, bringing about a fatal termination sooner or later.

Your patient, suffering intensely from utter prostration on account of the pain and the joint complication, will not have to be told to keep in absolute rest. Lying on his back, every motion or jar will be painful, agonizing, and your first duty will be to give him relief in that direction.

You have many ways before you; consider well the surroundings of your case, and your judgment will decide you in the course to pursue. A comfortable bed, light (in contradistinction to heavy) clothing, and quiet surroundings should be insisted upon. The undergarments are to be repeatedly changed, and linen is preferable to any other covering, as woollen goods will soak up the moisture and keep your patient continually uncomfortable. Adopting Dr. Murchison's view as to the want of activity in the liver being, if not the cause, at least the promoter of the mischief, a cholagogue cathartic should be at once administered. Some recommend a dose of *blue mass*, either alone or combined with ext. colocynth. comp., or res. podophyll. Probably a better plan is to give small repeated doses of Dover's powder, say gr. ii every two hours, with gr. ½ of calomel, until the bowels are affected; it will ease the pain, aid the sweating, and act as a mild laxative. The latter action might be aided by giving a wineglassful of liq. magnesiæ citratis every hour or so, after a few doses of the calomel have been given, or the citrate of potassium can be used with the same intent, administered in the form of neutral mixture.

In all probability the great sweating which is characteristic of this affection is eliminative, to a certain extent; indeed, I have of late used jaborandi, to increase or aid it when not fully established, and in these cases the intense sweating following has given almost immediate relief to the pain.

But you must bear in mind that although excrementitious matter may be eliminated by the skin, it requires much water to hold it in solution, which is taken at the expense of the tissue, unless you add to the supply. Let your patient drink as much water as he wishes,—carbonated waters, if they should be more refreshing, preferring probably the Apollinaris water as the most agreeable. They serve the purpose of quenching thirst, are mildly stimulating, diuretic, and at the same time supply that alkalinity which is essential to the neutralization of the excess of acid which is found in this affection, and to the prevention of blood-clotting. You may use the Saratoga Vichy water, which contains a large quantity of bicarbonate of sodium.

As for diet, milk, with lime-water, given iced if the patient prefer it, seems the most easily digested, and when the thirst is great, and the tendency to prostration extreme, beef-tea made strong and frozen may be used instead of ordinary cracked ice. The bromides are highly praised in this disease, particularly that of ammonium, as used by Da Costa and others;

they are sedative, and, to a certain degree, diuretic. The bromide of lithium, from some experiments that were lately instituted in this house, is decidedly diuretic, in one case increasing the quantity of urine to twice the amount, when given only in ten-grain doses every three hours, at the end of twenty-four.

Of late, salicylic acid and its salts have been introduced in this connection. In the case before us, salicylic acid has been given in pill-form in five-grain doses, repeated thrice daily, with marked benefit. It acts with marvellous rapidity upon the painful joints, and also has the effect of lowering temperature. As it is rather irritating when given in this way, I have used it dissolved in spts. ammon. aromat., or liq. ammon. acet., which dissolve any amount of it readily, and, when given with a small quantity of opium, rests well upon the stomach. The salicylate of sodium, and that of lithium, are good substitutes for it, and much less irritating. Owing to the higher febrile action accompanying these cases it often becomes necessary to administer a cardiac sedative. In this hospital Dr. Ludlow has, for years past, recommended the nitrate of potassium, a drachm to the pint of water, to be taken during twenty-four hours, as the only medication, and this has served well all the indications.*

In all cases it is well, from the commencement, to associate a small quantity of potas. iodid. with your medicinal treatment; it will aid re-absorption of any organized lymph in the joints or upon the valves, increasing the dose as the deposit gives evidence of getting larger. A few doses of tinct. aconit. rad. may be indicated when the arterial tension is high and the joint trouble particularly painful, or tinct. digitalis when heart-failure is imminent. As for local treatment, we adhere to the old-timed lead-water and laudanum in most cases. Some cases in this house, of great severity, obtained relief from compresses made of jaborandi leaves encircling the joint. Solutions of salicylic acid, the salicylates, bicarbonate of sodium, poultices of stramonium leaves, cotton wadding, etc., have all been used. Blistering, in the acute stage, is not to be thought of, as it leaves a denuded surface, which interferes with future applications.

* See article on Action of Potassium Salts on the Human Body, Journal of Physiology, vol. i. No. 1.

If you detect, as we have in this case, a cardiac complication, you rely on your sodium and potassium salts, your cardiac sedatives, and, if there is much oppression or pain in the præcordium, a few leeches, followed by a mush or hop poultice, will be of advantage. Cold is not only not indicated, but even may be productive of harm. The condition of the heart, then, is the indication for treatment. Everything else being equal, the early development of a murmur will cause you to push the treatment, provided you are sure the lesion is a fresh one, otherwise it will be unnecessary.

As this disease is productive of profound anæmia, *iron* is indicated to correct this tendency. When your patient can tolerate it, begin early with Basham's mixture, increasing the dose as the pyrexia diminishes.

Let me impress one thing upon you. The mildest cases, judging from the fever, pain, etc., are often accompanied by the most serious heart-lesion, just as we have often seen the so-called mild cases of typhoid fever are the most fatal, because in them we neglect to use all necessary precautions.

[The patient continued to take salicylic acid, with no other treatment except counter-irritation to the chest, and in a few days recovered rapidly. When taken before the class again, the heart-sounds presented the same characteristics as they did previously; the mitral regurgitant murmur being the most marked, as the pulse was lessened in frequency, and the rhythm could be more easily detected. The præcordial friction had entirely disappeared.]

ORIGINAL COMMUNICATIONS.

THE PHYSIOLOGICAL ACTION OF NAPELLINA AND ACONITIA.*

BY J. MONRO MURRAY, Asst.-Surg. U. S. N.

PART I.—NAPELLINA.

(Continued from page 344.)

NERVOUS SYSTEM.—In a number of experiments not necessary to report in detail, it was found that napellina is especially poisonous to the nervous apparatus, acting primarily on the respiratory system and causing death in that manner.

The general phenomena observed agree with those recorded by other observers, except that the drug in moderate doses does not particularly affect the heart.

Action on the Motor Nerves.—The nerve tested was in all cases carefully isolated from the surrounding muscular structures, and gently lifted out of its position prior to the application of the electric current by means of Ludwig's electrodes. The strength of the current was graduated by Dubois-Reymond's apparatus, one cell being used eighty-one millimetres in height and fifty-eight in diameter.

In thirty-eight experiments upon frogs in regard to the action on the motor nerves, I have observed that in all cases the neurility of these nerves was quite impaired, and in most cases there was an entire destruction of their functions. Where there was no complete paralysis I have noted that it was not dependent on the variety of the frog used. Ott has arrived at like conclusions from his researches on lycoctonia.*

Sensory Nerves.—In these experiments I used the methods of Bernard and Brown-Séquard. Von Bezold's method, as Boehm and Wartmann have demonstrated, is liable to too many errors for safe conclusions. With the Bernard method the iliac artery and vein on one side were ligated, and then the poison was injected into the lymph-sacs of the back.

In a number of experiments made after the method of Brown-Séquard, it was found that when irritation of the sensory-nerve endings in the skin was not able to call out reflex movements, irritation of the trunks did so for a while, showing that the abolition of sensibility by napellina proceeded from the periphery of the centre. This view is also further supported by the fact that when the poison was prevented from going to the origin of the nerves of the posterior extremity by section of the spinal arteries, irritation of the poisoned posterior extremity was unable to call out reflex movements in the unpoisoned extremity. Here the trouble was not in the lower segment of the spinal cord, since it received no poison, but in the sensory-nerve endings, which did.

Action on the Striated Muscles.—The prolongation of muscular contraction by veratria was first noticed by Kölliker. Bucheim and Eisemerger found that the curve of napellina was essentially different from that produced by aconitia. Weyland states that the curve of aconitia is very much prolonged, like that of veratria. I used Marey's comparative myograph and Foucault's regulator to study the effect of napellina on the muscle-curve.

The frogs received the poison, and in from twenty minutes to one hour afterwards the gastrocnemii were separated from the body and attached to the myographic levers. The muscles were kept moist by a weak solution of chloride of sodium. Dubois-Reymond's key or a contact-breaker was used to open and close the electric current. I made seventeen experiments in all, and failed at any time to see a prolongation of the muscle-curve. I also made other experiments by the direct action of the poison on the muscle. I took the gastrocnemii of a frog and immersed the one in a solution of napellina 1 c.c. =.01 gr., and the other in distilled water. On testing with Dubois-Reymond's apparatus, it was found that napellina directly applied to the muscles reduces their irritability.

Action on Respiration.—The experiments on respiration were made on rabbits, cats, and dogs. A T-shaped canula was used, which, after the operation of tracheotomy, was bound in the trachea. One limb of the canula communicated with a Marey's polygraph, whose lever recorded the number of respirations on Ludwig's registering apparatus. In eleven experiments it was found that napellina caused first an increase and then a decrease of respiratory movements; that these movements are irregular and slowed in their character. After section of the vagi the same phenomena were present, showing that the vagi do not participate in the increase or decrease of the respiratory movements by napellina. These must be due to primary excitation of the centres of respiration in the medulla and their subsequent paralysis. The motor nerves of respiration are not greatly paralyzed, as when the phrenic nerve is irritated contractions of the diaphragm ensue.

Temperature.—The action on the temperature was studied on dogs, cats, and rabbits. In all of ten experiments there was a constant fall of from 3° to 3.50° C. The temperature was taken by the rectum.

Glandular System.—I have observed in all my experiments on warm-blooded ani-

* Phila. Med. Times, December, 1875.

mals that the salivary glands poured forth a great amount of secretion, which was very thick, viscid, and tenacious in character. The gall-bladder was always greatly distended. There was also decided diuresis in all the animals experimented on. The autopsies invariably revealed distended bladders. The urine in all cases repeatedly tested showed neither albumen nor sugar. The fecal evacuations were augmented, but there was no diarrhœa. The fæces were solid and firm. The intestinal peristalsis was decidedly increased, and the intestines responded to electric irritation. When pregnant animals were used, on the post-mortem the fœtus was alive in the cavity of the uterus, but in some cases uterine contraction was set up and the fœtus expelled prior to the death of the animal.

End of Part I.

ARE THERE SPINAL RESPIRATORY CENTRES?

BY B. F. LAUTENBACH, M.D., Ph.D.

MODERN physiologists have concluded that the stimulation producing the involuntary rhythmical respiratory movements proceeds from a circumscribed area of the medulla oblongata in the vicinity of the nuclei of the vagus and accessorius nerves. That the destruction of this portion of the nervous system immediately suspends the movements of the muscles concerned in respiration, and thereby proves fatal to the animal experimented upon, seemed indubitably to prove the preceding statement. From this centre—"*nœud vital*," as it was called by Flourens—it is now universally believed that the phrenic and external intercostal nerves are excited to produce inspiratory movements, and that expiration, in so far as it is active, is also under the control of this nervous mechanism.

These views were also adopted by me until recently, when, making some experiments on a different subject, I obtained results which show that centres other than those in the medulla oblongata are concerned in producing respiratory movements. Before, however, alluding further to these experiments, I wish to present a short *résumé* of the literature on the subject.

Legallois* was the first to place the respiratory centre in the medulla oblongata. He found that when he destroyed the cerebrum, the cerebellum, and the medulla oblongata down to the origin of the pneumogastric nerves, respiration still continued; but when the section included these nerves the respirations ceased and the animals died. A section of the spinal cord on a level with the origin of the second cervical nerves destroyed the movements of the chest-wall and diaphragm, but allowed the respiratory movements of the glottis and face to persist. A second section, immediately below the origin of the pneumogastrics, caused these latter to cease;† but—what is very important—yawning persisted ("*des baillemens persistent encore*").

These results were confirmed by Calmeil‡ and Flourens.§ The portion of the medulla oblongata whose destruction was followed by cessation of the respirations was called by Flourens the vital knot ("*nœud vital*"), because, as he supposed, life ceased when it was destroyed.

That the destruction of this vital spot or knot is not necessarily fatal was soon shown by Schiff‖ and Brown-Séquard,¶ who found the heart to continue to beat after its extirpation. The last-mentioned investigator saw attempts at inspiration take place after this operation, and believed that when fatal results occur they are due to the introduction of air into the opened veins through these efforts.

Schiff was able to extirpate a portion of the floor of the fourth ventricle, one and a half to nearly three lines wide, in the median line, throughout the length of the medulla oblongata, without interfering with the respiratory movements; but when he injured the upper outer portion of the ala cinerea the respirations immediately ceased, even if he had previously cut the vagi nerves.

Budge** concluded from his experiments that there were two distinct respiratory centres in the medulla, one of which is for expiration and the other for inspiration. The former he believed to be the pneumogastric centre, and the other Flourens's

* Œuvres, Paris, 1824, tom. i. pp. 64, 247.

† This statement is not absolutely true, as I have frequently seen these movements to continue after the destruction of the medulla oblongata; but they cease immediately on destroying the pons.

‡ Journ. d. Phys. Exp. et Pathol., 1823, tom. iii. p. 453.

§ Recherches experimentelles sur le Système nerveux, Paris, 1824, p. 177. Ann. d. Sci. Nat., tom. xiii. p. 86.

‖ Lehrb. der Physiologie, p. 324.

¶ Journ. de la Physiologie, i. p. 219.

** Arch. f. Path. Anat. u. Phys., xvi. p. 433.

nœud vital. According to this author, these two centres act antagonistically. The existence of two such centres was disproved by the experiments of Rosenthal.*

Faivre† compares the ganglion of the metathorax of insects with Flourens's *nœud vital.* This was, however, disproved by Baudelot,‡ who found that all the abdominal ganglia of these animals were concerned in respiration.

In normal full-grown mammals I have on numerous occasions destroyed the medulla oblongata, for various purposes. Under these circumstances the respiratory movements of the chest usually ceased immediately. As section of the medulla high up failed to have this effect, it seemed most probable that the older investigators were correct when they located in this portion of the nervous system a mechanism which was so differentiated as to preside over respiratory movements.

Even in these experiments the operation was not always followed by an immediate cessation of the respiratory movements, but the animals thereafter made several ineffectual attempts at inspiration. These attempts I at the time attributed to irritation of the fibres connecting the medulla-centre with the phrenic and intercostal nerves. On reflection it occurred to me that not only attempts at, but true inspirations must occur from such an irritation, and consequently these attempts must have been due to impressions made, by the necessity for oxygen, on centres other than those situated in the medulla.

Recently in two young dogs I destroyed the whole of the medulla above the calamus, and was much surprised to see the respiratory movements of the chest and diaphragm continue for about fifteen minutes after the operation. At the autopsies complete destruction of the medulla was found in each instance. In these animals the connection of the cerebral hemispheres with the pons had been destroyed several days previously, and as a consequence their rectal temperature was reduced to respectively 76.4° and 78.7° Fahr. This may, perhaps, have in some manner influenced the result, but it nevertheless must be conceded that after the destruction of the medulla oblongata in these animals, portions of the nervous system below it were able for a time to take on themselves its respiratory function.

On obtaining these results, I commenced a series of experiments to determine whether, after complete destruction of the medulla in normal animals, respirations still continued, and was rewarded in quite a number of instances by finding that they did. These experiments were all made on young dogs and cats. The operation must be made in young animals, and with very sharp instruments, to insure the possibility of success. Under other conditions, and where the operation was too rapidly completed, the experiment always failed. But even in these experiments I frequently found that respiratory movements could be reflexly excited by irritation of the anterior crural nerves.

If the nervous mechanism which excites the phrenic and intercostal nerves to action exists solely in the medulla oblongata, the action of these nerves must cease when the connection between them and the medulla is destroyed by section of the spinal cord in the upper cervical region. In a number of experiments made on various young mammals I found that the respiratory movements frequently continued after such a section. On looking over the literature on respiration, I find that Brachet,§ as early as 1835, observed the same phenomenon in one of his experiments on guinea-pigs, and P. Rokitansky‖ has shown that after section of the cervical spinal cord of animals poisoned with strychnia respirations still continue.

In a number of my experiments the vagi had previously been cut, notwithstanding which respirations still continued after section of the cervical spinal cord in several instances.

Conclusion. — Besides the respiratory centre or centres in the medulla oblongata, there exist in the spinal cord nervous mechanisms which may keep up the respiratory movements after the destruction of the former.

DR. J. MUTER, after several experiments, has found that thirty-five per cent. of glycerin-water can be added to milk without fear of detection either by gravity or by the ordinary "solids, not fat" process. The analysts must look to their laurels. Fortunately, glycerin is wholesome.—*Medical Examiner.*

* Comptes-Rendus, 1861, i. p. 754.
† Ann. des Sciences Naturelles, 1860, xiii. p. 81.
‡ Ann. des Sciences Naturelles, 1864, p. 1161.

§ Ueber Gangliennerven, Leipzig, 1836, p. 56.
‖ Wiener Med. Jahrb., 1874, S. 30.

NOTE ON UNNECESSARY HYPODERMIC MEDICATION.

BY G. BETTON MASSEY, M.D.,

First Asst. Phys. State Hosp. for the Insane, Danville, Pa.

AN editorial in the *Times* of March 16, on hypodermic medication, recalled to mind a flagrant instance of the abuse of this valuable therapeutic method. A young lady, suffering from mild melancholia, came under my care some time since, with seven or eight ulcers on each arm. In addition to these, a series of as many deep abscesses afterwards showed themselves, extending far in between the muscles, and literally honeycombing the whole of both arms.

Her physician had thought it necessary to administer repeatedly as much as lx gr. chloral hydrate by the hypodermic method, on account of a fancied inability to give it by the mouth. By a little persuasion I succeeded in overcoming her repugnance to the taste; but the physician's rash experiment cost the patient three months of suffering and a lifetime of scars.

TRAUMATIC TETANUS—RECOVERY.

BY HORACE Y. EVANS, A.M., M.D.

JOHN D., æt. 21, in vigorous health and of temperate habits, February 11, 1878, had all the fingers of his right hand crushed by being caught between cars. I amputated the first, second, and third fingers at the middle of the shafts of the first row of phalangeal bones, and the fourth finger at the middle of the third phalanx. The parts were dressed with carbolic acid and laudanum, and enveloped in carded cotton.

22d.—The patient complained of difficulty in deglutition; wounds doing well.

23d.—Trismus well marked. Tonic spasms of the flexor carpi ulnaris of right forearm.

24th.—The masseter, sterno-cleido-mastoid, and muscles of right forearm rigidly contracted. Pulse 100, temperature 98°. Wounds healing nicely.

26th.—Has had three violent attacks of opisthotonos during the past twelve hours; partial paralysis of right leg.

28th.—Aggravation of all the symptoms; has had thirty-eight attacks of spasms of the neck, throat, and back during the past twenty-four hours, in several of which death from suffocation seemed imminent; profuse perspiration and diarrhœa.

March 1 and 2.—Life in peril every hour from the persistency of the convulsions.

3d.—Slight palliation of the symptoms; perspiration and diarrhœa arrested. Pulse 100, temperature 98°, respiration 20.

8th.—Continues to improve; but four attacks of opisthotonos since yesterday; can now move and direct the right leg.

15th.—By mistake the chloral and bromide and morphia were omitted for four hours, and as a consequence there was a return of a violent opisthonotic spasm.

19th.—Improved in every way; relaxation commencing in all the muscles implicated.

23d.—From this day (6th week) convalescence was uninterrupted, and he is now (April 23, 1878) in splendid condition and ready for work.

The treatment consisted of a combination of bromide of potassium, hydrate of chloral, and tinctura opii acetata, in varying quantities and frequency of administration as the condition seemed to demand. But these, even in large doses, failed to arrest the spasms until assisted twice daily by gr. ½ of sulphate of morphia hypodermically. Hot hand baths and chloroform liniment to muscles of back and neck appeared to palliate his sufferings.

The stomach was at all times retentive, and during the intervals he was enabled to swallow large quantities of beef-tea, milk, and eggs. Not any stimulants were used. The patient was seen on different occasions by Drs. Baldwin, Samuel Ashhurst, and Cleemann.

GREEN STREET, PHILADELPHIA.

NOTES OF HOSPITAL PRACTICE.

UNIVERSITY HOSPITAL.

CLINIC OF DR. WILLIAM GOODELL.

(Reported for the *Medical Times.*)

LACERATION OF THE FEMALE PERINEUM AND CERVIX UTERI.

MRS. McD., æt. 33, has had four children. Two years ago, upon the birth of her fourth child, she was delivered with the forceps, after a tedious and painful labor. Since that time she has been unable to retain the contents of the bowel. Two months ago she aborted her fifth child, and ever since has suffered from constant bleeding. A careful examination has shown us a laceration of both perineum and cervix uteri. The sound shows a total length of three and a half inches for the uterine cavity. The uterus is relaxed and flabby.

From the woman's own statement, she was not conscious of anything wrong until she got out of bed. Her first warning of the accident was her inability to hold her fæces and wind. This is just a repetition

of the same old story: the attending physician neglected to examine the parts carefully after the labor, and so the double laceration escaped his notice. Let me once more impress upon your minds the absolute duty which is laid upon you of examining the parts carefully and minutely after labor, and either of satisfying yourselves that there is no ulceration, or, if there be one, of sewing it up at once, after having made a clean confession of the accident to the woman. In order to avoid the occurrence of this accident, my advice to young men has always been to take the forceps off the minute that the head bulges the perineum. This rule is particularly absolute in cases of primiparæ. I am referring now, of course, to rupture of the perineum. You should examine the parts not only with the eye, but with the fingers. Place your index finger in the rectum, and your thumb in the vagina, and see if there is still the normal amount of tissue between the two. As I have already remarked, the physician in this case, whom I know to be a most competent man, did not make a thorough examination, and so lost the golden opportunity of passing in sutures; for if the rent looks like a bad one, and involves to any extent the sphincter ani, you should always suture it on the spot. In cases where the sphincter has not been injured to any great extent, the cure may usually be left to nature. Very little pain is caused by sewing up the rent immediately, as the parts are numbed and the nervous sensibilities of the patient blunted by the exhaustion consequent upon labor. Of course it is best to give ether before the immediate operation also; but in cases where such a course is not advisable, remember that the skin is the most painful part, and, in passing the needle, plunge it quickly through the skin, and take your time in getting it through the rest of the tissues. Be careful to have with you a perineal needle, such as this one, in all labor cases.

But this poor woman is suffering from other troubles. She has a bad laceration of the cervix, and she has been bleeding constantly for the past two months. How do I explain this bleeding? The womb, you were told, was three and a half inches long. This abnormal length is undoubtedly the result of subinvolution. There are probably some fungous growths in the womb. Let me see if this is not the case. I will pass this sharp curette into the cavity. Let us see what we can bring to light. Subinvolution alone will not produce such constant bleeding. Yes; it is just as I thought. As I pass the curette over the right side of the cavity, probably the placental site, you hear what a grating sound is produced. Upon withdrawing the instrument I bring out a quantity of fungi looking like pieces of boiled tapioca. I do not find near as many of these growths to-day as I did last week. They only exist over the placental site, and are due to an exaggerated local growth of normal tissue.

Let us now turn our attention to the cervix. For examining these parts Sims's is the best of all specula, the only drawback to its use being the necessity for an assistant to hold it in place. Unfortunately, you can see but very little of the operation for laceration of the cervix. The cervix was probably lacerated at the same time with the perineum, or the accident may have been perhaps due to premature rupture of the membranes. As the woman wants me to operate upon both perineum and cervix to-day, I must begin at once, without any more waste of time.

I will begin on the lower side of the cervix, and get that done first. This operation for laceration of the cervix will relieve the woman of a great deal of misery. Lacerations of the cervix are almost always lateral. The complete subinvolution of the womb is retarded by the condition of the cervix, and so the bleeding and leucorrhœa will continue until the cervix is restored to its normal state. The rent in the cervix rubbing against the wall of the vagina sets up a constant source of irritation, and abrades the exposed mucous lining. I cut out of the rent a wedge-shaped piece, so as to make sure that no spot of mucous membrane is left behind. The cervix is vascular, and, as you see, bleeds readily. Having trimmed off and coaptated the edges, I will now proceed at once to run in my sutures. The passage of the stitches through the tissues always stops the bleeding. Sometimes an artery spurts, and, not being able to ligate it, you have to depend on the stitches to stop it. This operation for laceration of the cervix uteri is generally a most successful one. The hardest part of the whole operation is the passing in of the sutures. A cervix which has been for a long time in such a condition

as this one presents, offers one of the greatest obstacles to the passage of a needle to be met with in the whole range of uterine surgery. This cervix is just as tough as leather. I have upon several occasions found it almost impossible to pass needles through such tough tissue without bending and perhaps breaking them in the attempt. You see how my needle turns in the grip of the holder. However, I have been more successful than usual to-day in pushing the needle through. Never thread your needle with the wire, but pass a piece of fine silk thread through the eye of the needle, and tie a half knot in it. In making the stitches, pass the end of the wire through the loop of the thread, and simply bend it over; the wire will, of course, follow the loop.

You will be very often required to perform this operation. A lady will call upon you and tell you that she has been treated by a number of physicians without any success. She suffers greatly from leucorrrhœa and menorrhagia. She gets well, and then it comes on again. In making your examination you see what has been mistaken by her previous physicians for an erosion,—a raw surface to which nitrate of silver and all manner of things have been applied without producing any permanent cure. How are you to prove that the apparent erosion is in reality a laceration of the cervix uteri? Take two tenacula and bring the sides together: if this causes the seeming erosion to disappear, you may be sure that you have a laceration of the cervix to deal with. Some lacerations resemble exceedingly a simple erosion.

How about this lacerated perineum? Ought I to operate upon it to-day? That would make the third operation in one day, counting the scraping out of the fungous growths as operation number one. I think it would be safer to postpone the work on the perineum until next week. I want to take out the stitches in the cervix on the eighth day. If I operated upon the perineum also to-day they would have to remain *in situ* for at least twenty days, perhaps longer. Then, too, there is the danger of septic trouble in the wards, and the general danger of peritonitis. Of course she would be much more exposed to the above diseases should I close up the rent in the perineum at this same sitting.

This last stitch on the lower side I will pass all the way through with one sweep. As I have proceeded with the operation you notice that the patient has been gradually getting over on her belly. That is not the proper position for the operation, of course, but so long as I can work easily I will let her alone. I see that I shall have to pass another suture just below the angle, so as to stop all the bleeding. The operation is at best a long and tedious one. I hope to shorten it in future by persuading Mr. Gemrig to have a much stronger needle-holder made for me. Of course the leucorrhœa will be cured by this operation. So much for the rent in the anterior lip. On the other side the rent is shorter and the operation easier. Before denuding on this side, let me see where the os uteri is, so that I may not include too much tissue within the sutures, and so occlude the natural opening into the womb. I take a wedge-shaped piece out on this side also; otherwise I might leave some islets of mucous membrane behind. It bleeds very freely on this side. The laceration is worse on the left lip because the vertex presents on that side. In the vast majority of cases where there is an occipito-posterior position the vertex will present on the right side, and the laceration will be worse there.

I have already mentioned one means of diagnosis between a laceration of the cervix and an erosion. In some cases the cervix is mushroom-shaped, and curls over like a cut celery-top. This being the case, when you put in your speculum you make it turn still farther over, and present a plane surface. When this happens, the only means of determining the exact nature of the trouble is to pull down and bring together with the fingers the parts which have turned over.

To-day the woman's womb is three and a half inches long. By the first week of June, or earlier, I hope to bring her before you and show the womb reduced to its normal size. In the vast majority of cases subinvolution is entirely dependent upon the laceration.

I am now ready to clamp all my stitches; but first let me open the sides of the rent and with a sponge (a syringe is the best thing for this purpose, but here there is only space enough to use a sponge) clean out all the clots. Here, I find, is a little shred of mucous membrane which I have overlooked, and which must be carefully clipped off before bringing the sides to-

gether. I will run my first clamp down upon this suture at the lowest angle.

I shall not proceed to operate upon the perineum to-day. Next week I will remove the stitches I have just put in, and then will be the time to operate upon the perineal rent. I prefer to take the stitches out at the end of a week's time; otherwise the orifices left after the removal of the wires will heal up by cicatrices, and you know how painful it would be should a nerve-fibre be caught in one of these cicatrices.

I have, you see, now succeeded in clamping all the stitches put in. In bringing the sides together it is exceedingly difficult to get exact mathematical coaptation; but always try to come as near hitting it as is possible. Be very careful in sewing up the rents that you leave enough space for the natural shrinkage of the parts, so that the cervix will not be occluded. The result of the operation gives what is called a conical cervix. The cervix instead of being broad on top is conical. I have been very careful not to leave any raw surface exposed, for fear of dangerous and draining hemorrhage. The veins of the womb and cervix are valveless, and the tissues are erectile. If, in spite of all my precautions, bleeding should take place, I should order first an injection of hot water (110°) into the vagina, and if that did no good I would try a saturated solution of alum. As a final resort the tampon is, of course, indispensable.

I have cut the ends of the wires off short after clamping the shot as tightly as possible. I think I have left enough "space for repentance," as painters call it, on each side of the cervix. The external os now measures fully one-half an inch in diameter.

If you wish to keep the edges on your curved scissors, always, in such an operation as this one, cut the wire ends with the heel and not with the point of your scissors. In the operation for vesico-vaginal fistula you cannot do this. There you will have to have several pairs of sharp scissors at hand. You see how tedious an operation it has been. I have been kept hard at work for a whole hour. I never performed this operation in less than forty minutes. The last thing I do before sending the woman to the wards is to push the cervix well up, and so throw the fundus into the hollow of the sacrum.

In two cases of laceration of the cervix in which there was serious retroflexion of the womb, that organ was righted by the operation which I have just finished. I do not think that the patient will suffer from any troublesome symptoms between now and next Wednesday.

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This is the same patient that I operated upon last Wednesday for laceration of the cervix. To-day I shall close up the rent in the perineum. The doctor who attended this woman (I suppose I may tell you, as he is now dead and gone), though a most excellent physician, was greatly addicted to liquor. On one occasion, when attending a woman in labor, while under the influence of liquor, he pulled the child bodily out of the mother with the forceps and threw it upon the bed. I am afraid he was in somewhat the same condition when he delivered this woman.

The first thing I will do to-day will be to remove these stitches. I take them out now because if I do not I shall have no chance of removing them for some three weeks. The union has, I find, been complete on both sides of the os. The success in these operations is due to the great vascularity of the parts. This woman has suffered but little pain, and took no medicine except a small dose of opium on last Wednesday.

The rent in the perineum turns out to be a very bad one, running through both the sphincter ani and recto-vaginal septum. I will begin, as is my custom, by shaving off the skin on the lowest part of the rent first, so that the bleeding may not obscure the parts. I pass my finger into the anus, and with a pair of curved scissors trim off the surface. I take great care to snip off all the mucous membrane of the surfaces to be brought together. This work of trimming has to be done very slowly; once in a while a little artery spurts. I control the bleeding by applying a *serre-fine*. A ligature would be always in the way.

The treatment preparatory to this operation consisted in a dose of oil yesterday morning, followed by an enema. The last passage from the woman's bowels took place at six o'clock this morning. A little later this morning she took a pill of opium. A suppository containing opium was also administered. The patient will suffer a good deal of pain from this operation. The stitches always cut more or less; particularly is this the case with fat people.

In examining the women who have come under my notice, I have found the average of women having complete laceration of the perineum to be about one in one hundred. This is certainly a very large proportion. The unskilful use of the forceps is the cause of most perineal lacerations; fully nine-tenths of the whole number are due to this cause. The child is delivered with a little too much force, or the head is turned a little too soon, or the attendant, in turning the head, makes traction too directly with his forceps, and does not turn their handles over the mother's belly.

There is always more or less bulging of the mucous membrane of the rectum in these cases. If this membrane is in your way, do not hesitate to cut it off. I think I have now succeeded in trimming off all the mucous membrane necessary, and so I shall proceed to put in the sutures. I must be very careful with the first and lowest stitch, as it is the keystone of the whole operation. I begin by piloting the needle through the tissues by means of a finger in the rectum. This stitch is the purse-string which is to bring the edges of the perineum together, and so it must always be passed in on a level with the lower verge. The next is put in a little higher, and then I have done with the curved needle. I shall now take the perineal needle and carry it in to the centre of the denuded vaginal surface, first on one side and then on the other. I pass my stitches first up to the edge of the undenuded surface; otherwise I might have secondary hemorrhage. I am using fine iron wire because it is stronger and cheaper than the silver wire. I am particularly careful that no clots or débris of any sort are allowed to remain in the track of the rent, for the presence of any foreign body would prevent complete union of the sides. As there is a tendency to inversion of the edge, I shall trim it. Now that all the stitches are in place, it looks as if the fundament were completely closed up; but it is not so. I am accustomed to use a good deal of firm traction in bringing the parts together: I thus avoid the danger of secondary hemorrhage.

The after-treatment shall consist of enough opium to lull pain and prevent any movement of the bowels for eight or nine days. Before removing the patient I shall put a napkin between her knees and bind them together. I shall also draw off her water. Never employ a self-retaining catheter in these cases. There is too much danger of its being left in overlong, and so producing cystitis. Have the water carefully drawn twice or thrice daily. This can be done without unbinding the knees,—namely, by flexing the knees and thighs upon the abdomen, the woman being upon her back, and so introducing the catheter. If the woman be annoyed by painful flatus which does not yield to teaspoonful doses of the fluid extract of valerian, a flexible catheter must be introduced into the rectum. On the seventh or eighth day I shall cut and remove every suture except the rectal one. On the morning of the ninth day, four ounces of warm olive oil must be slowly injected into the rectum, followed two hours afterwards by a soap-water enema. Should hardened fæces over-distend the rectum, the nurse must break them up either by her finger, a hair-pin, or the handle of a spoon. When the medicine operates, I will remove the last suture. After the bowels have been thoroughly opened, they should be again locked up for four or five days more, and then be kept daily open by a mild aperient. The patient should have her knees bound together, and be kept in bed for at least two weeks, and for fully a week longer should not go out of her room. During this last week she should walk about but little, and keep her knees close together. Should a fistulous opening remain, fuming nitric acid should be applied, and the sides sutured together.

TRANSLATIONS.

CARBOLIC-ACID INJECTIONS IN CHRONIC INFLAMMATORY AFFECTIONS OF THE JOINTS.—Ferd. Petersen, of Kiel, speaks, in the *Centralbl. f. Chirurgie* for March 23, of these injections, recommending them very warmly. They were first proposed by Hüter, since which Petersen has used them in several cases with marked success. One case was that of an otherwise healthy boy of 7, who had suffered for twelve weeks with a somewhat painful inflammation in the elbow-joint, accompanied by only slight swelling. Before the patient came under Petersen's care he had been treated for a

long time with plaster-of-Paris bandage and ice, but without benefit. Petersen injected a hypodermic syringeful of a two per cent. solution of carbolic acid into the joint. In this, as in a few other cases, the injection caused pain, and an abscess formed. By the time the latter was healed, some four weeks after the injection, the articular inflammation was entirely gone, and the arm pretty freely movable. The patient disappeared shortly after, but there was every reason to believe that a complete cure resulted. A second case was that of a young girl of 17, who had suffered for four years with articular inflammation about the hand, probably originating in the wrist. The hand was much swollen and very sensitive over the joints. Resection or amputation seemed to offer the only chance of relief, but Petersen concluded to try a carbolic-acid injection as a last resort, and did so. The result was striking. At first every other day, then every third day, and later less frequently, injections of 16♏ of a two per cent. carbolic-acid solution were made in the carpus, near the joint. Already by the sixth day decided improvement was observed, and from that time the pain and sensitiveness gradually diminished and disappeared. The patient began to use her hand at the end of five months, and in six months "could do anything with it." The third case, which was still more striking in its result, was that of a little girl of 11, who suffered with scrofulous ostitis of the right trochanter, with synovitis of the ankle-joint. A fistula led to the bare bone. This patient was treated in the same manner as the second case. She came to and from the clinic daily, no rest being employed. At the time of the report the foot was nearly well. x.

Gastrotomy for Stricture of the Œsophagus.—F. Trendelenburg gives in the *Wien. Med. Presse* (*Cbl. f. Med.*, 1878, p. 94) the case of a boy, 7 years old, who suffered from narrowing of the œsophagus following the swallowing of lye. The stenosis of the œsophagus progressed until the boy was threatened with starvation. Gastrotomy was practised, which was not followed by any reaction, and within two days the patient was able to take food through the fistula. Within the latter a drainage-tube the size of one's little finger was placed, to which, when the boy wished to take food, a longer rubber tube was attached by a glass tube, the former reaching up to the mouth. The food being finely chewed and insalivated was then forced by a partly blowing, partly reversed swallowing movement down the tube and into the stomach. The patient not only made a good recovery, but gained in four months one-fourth more weight. x.

Hereditary Transmission of a Lock of White Hair.—The proceedings of the Société *Medico-Chirurgicale de Liège* contain an account of a curious case which is abstracted by *Le Mouvement Médical* of March 16, as follows. Dr. Rizzoli saw a handsome young woman who displayed over the fore part of the scalp a tuft of white hair, long, thin, and showing a marked contrast to that surrounding it, which was jet-black. It appeared that not only was this peculiarity congenital, but had been hereditary in the Italian family of which the patient was a member, during the last two centuries. The authorities of the city of Imola, of which this person was an inhabitant, have continued the laudable practice of entering upon the town records any extraordinary occurrence of the kind, and it appeared by reference to these, together with an examination of the genealogical record of the family, that forty-five of its members had at various times during six generations displayed the same peculiarity. x.

The Stomach-Pump in Diseases of the Stomach (*Berlin. Klin. Wochens.*, No. 4, 1878).—Dr. Malbranc, formerly assistant to Prof. Kussmaul, contributes the notes of an interesting case of gastralgia, together with remarks on emptying the stomach and cleansing it by means of the catheter. From the latter part of his communication we abstract the following remarks on the employment of this method:

Unloading the stomach by the catheter or stomach-tube is to be used in those cases where the dilatation of this organ is connected with retention of undigested masses of food, and is to be carried so far as to allow full contraction of the organ when this is possible. In cases of gastralgia entirely dependent upon the accumulation of food within the stomach, the relief gained by simply emptying and washing this is immense.

The removal of irritating masses such as are found in the stomach in chronic dyspepsia and catarrh with pyrosis must alone be of benefit, and when to this is added the introduction of alkaline fluids, solu-

tion of soda, Vichy water, etc., to obviate the influence of the acids on the irritated mucous membrane and to wash these away, it will be seen that the advantage of this treatment is decided. The removal of the collected mucus from the walls of the stomach is a great benefit, since this above all things aids in starting and keeping up fermentation, and in the formation of abnormal acids, as butyric. For this reason washing out the stomach is not only to be recommended in typical cases of dilatation, where masses of food lie constantly in the stomach, but also in those cases of dyspepsia with slight dilatation where mucus and bile are collected in the stomach in the morning and the formation of acids with painful sensations is only experienced after eating. Here, if the stomach is emptied only after meals, of the undigested food, palliation alone can be expected; but if the sound be used early in the morning the cause of the trouble, in the shape of fermenting mucus, is removed, and the affection is in the way of radical cure. Dr. M. here points out that the patient may become demoralized if the habit of emptying the stomach after meals is established. Patients sometimes indulge in all the pleasures of the table, knowing that they can remove with facility what remains undigested three or four hours after the meal. Of course under such circumstances a permanent cure cannot be expected. When the accumulation of gases in the stomach gives rise to gastralgia, the morning cleaning out of fermenting mucus is also beneficial. Dr. M. considers the local warm bath an admirable adjuvant to the other methods. Of course this is to be avoided in cases of perforating ulcers, but when the diagnosis is quite clear it may be used to great advantage, being decidedly soothing to the irritated nerves. The temperature of the water passed in should be high, —98°–100° F. This aids also in overcoming constipation, especially when used in the morning. The water used by Malbranc is saturated with carbonic acid, which itself acts as a local sedative. In the latter portion of his paper Malbranc describes the method of using the sound. x.

The Continuous Bath.—Hans Hebra (*Cbl. f. Chir.*, 1878, p. 89; from *Wien. Med. Wochens.*) has within the last fifteen years treated more than five hundred patients with the aid of the continuous bath. With the exception of some slight local irritating influence upon the skin, observed in a few cases, no disagreeable symptoms have been observed. The bath has even been continued during menstruation without disturbance. The treatment has been used,—

1. In burns (56 per cent. mortality). Favorable effect upon all symptoms; the effect in allaying pain is remarkable. Scars usually soft and smooth, and movement in no way hindered.

2. In pemphigus. While no cases of P. vulgaris proved fatal, a mortality of 81 per cent. was observed in P. foliaceus. In the latter affection the patient's condition was only endurable when in the bath. Relapses were not prevented.

3. In confluent variola. All patients in whom the eruption showed itself profusely were placed in a warm bath when the eruption had reached its height, and with the best results.

4. In gangrenous wounds and ulcers, whether of syphilitic origin or not. Of the latter, gangrenous buboes were most frequently thus treated. (Mortality, 12 per cent.)

5. In phagedænic chancres the result was not less happy. In phlegmon and in fistulous wounds which would not heal in any other way, the continuous bath acted surprisingly well. x.

Salicylate of Sodium in Gout.—Dr. Bisson writes to the *Année Médicale* for February the account of a case of refractory gout of twelve years' standing in which this remedy was found of great use. The patient suffered from a severe attack every autumn; most of the joints had been affected, and there were numerous chalky concretions which here and there had ulcerated through the skin. No medicine had been of the least avail. Dr. B. gave the salicylate in doses of eighty grains in twenty-four hours, and with the best results. x.

Polyuria without Glycosuria, following a Violent Shock, cured by Ergot.—Dr. H. Rendu (*La France Méd.*, No. 17, 1878) gives the case of a man in good health, who, while rowing in a boat at sea, and at a moment when he was perspiring profusely, was thrown overboard and remained in the water a long time. He experienced no ill effect until the next day, when he was attacked by violent suborbital neuralgia with vertigo, which lasted nearly a fortnight. At the end of that

time a new symptom presented itself in the shape of copious sweating, obliging him to change his linen several times during the night; in addition he began to urinate frequently and copiously. His former symptoms now disappeared, and, excepting the annoyance caused by excessive secretion of sweat and urine, he seemed well. It should be added, however, that he showed marked polydypsia and polyphagia, drinking and eating enormously.

When examined by Dr. Rendu, the urine, of which ten litres per diem were passed, was clear and limpid, sp. gr. 1017; examined by the usual reactions, no trace of sugar or albumen was found. Under the use of valerian, the excretion of urine fell to nine litres per diem, but, as it was badly borne, pills of sulphate of atropia were substituted. This medicine reduced the quantity of urine to a little less than eight litres, but it provoked a general condition of malaise, with loss of appetite, headache, difficulty in urination, and excessive thirst, and was therefore diminished in quantity and administered in connection with powdered ergotin. Subsequently the ergot was given alone to the amount of eight grains in the twenty-four hours. While the combined medicines reduced the daily amount of urine excreted to six and a half litres, within a single day from the time the ergot began to be taken the amount of urine diminished to five litres, and it continued to diminish daily. The dose was increased after several days to fifteen grains in twenty-four hours, and the amount of urine had fallen by the end of a week to two litres daily. It should be added that, although the patient eliminated a large quantity of urea (eighty-seven grammes on the tenth day), the liver was quite healthy, to all appearance, throughout. X.

ORIGIN AND TREATMENT OF EPITHELIOMA OF THE SKIN.—Busch (*Centralbl. f. Chir.*, 1878, p. 174; from *Arch. f. Klin. Chir.*) suggests the following as the probable origin of epithelial cancer as it occurs in the skin. The first hypertrophic layers of epidermis which are formed after some irritation may probably prevent the newly-formed epithelial cells pushing up towards the surface, as in the normal condition they tend to do, and cause them to develop downwards. Relapses are to be explained in the same manner. Holding this view, Busch is accustomed, so soon as he sees signs of incipient epithelioma in the skin, to soften the upper layers of the epidermis by means of a weak soda solution. Ordinarily he uses this in the strength of 1:100: when, however, the epithelial growth is unusually thick, Busch employs the solution in the strength of 1:40. After the growth is removed, its recurrence is prevented by applications of a half per cent. solution of soda. Busch has succeeded in removing epithelioma of the face by this means even when an ulcer had already formed. The scar and surrounding tissue is to be bathed with the soda solution for some time after the sore is healed.

In addition, Busch recommends that those epithelial collections occasionally found on the nipples of old women should be removed by alkaline applications, and their return prevented by washing with the same from time to time. He thinks that these masses stop up the openings of the small glands and by their pressure upon the acini below favor the development of carcinoma. X.

OLIGURIA AND POLYURIA OF REFLEX TESTICULAR ORIGIN.—Nepveu (*Centralbl. für Med.*, 1878, p. 96; from *Revue Mensuel*) says that the secretion of urine may be influenced reflexively from the testicle when the nerves of the latter are excited by direct trauma, by inflammation of its substance or that of its tunica vaginalis. In inflammation about the testicle, particularly after the operation for hydrocele by puncture and injection of tincture of iodine, Nepveu has observed the quantity of urine passed during the first few days diminish to one-half the normal, then rise again to a considerable amount over the normal, and finally recover its usual quantity. X.

FORMULÆ.—*In Chronic Adenitis.*

℞ Emplast. hydrarg., ℥ss;
Pulv. opii,
Pulv. camphoræ, āā gr. xiij.—M.

To be spread as a plaster and applied to the tumefied ganglions.—*Dict. de Méd. et de Thérapeutique.*

Iodoform in Indolent Venereal Ulcers.

℞ Iodoform., ℥vj;
Glycerin., f℥iij;
Alcoholis, f℥i.—M.

To be applied on lint, and changed not oftener than twice daily.—(Klink: *Vierteljahrschr. f. Derm. u. Syph.*, 1877, p. 397). X.

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, MAY 11, 1878.

EDITORIAL.

JOHNS HOPKINS TRUST.

THE erection of the hospital of this joint trust is now being actively pushed forward. The will of Mr. Hopkins requires that all building shall be out of the income of the estate; but, there being now in hand over $350,000 of accumulation, it is expected that some five hundred men will be kept steadily employed during the whole of the present season. As the preparation of the ground, such as grading, digging, and draining, was nearly completed last summer, and as much of the heavy foundations was also laid during that period, by next fall very sensible progress will be made in the building. It is estimated that the whole structure will cost $1,200,000, and hence that it will be four years before its completion.

If, as seems probable, the period of tuition at the medical school of Johns Hopkins University be fixed at four years, two years being devoted to the fundamental sciences, and two to the study of the practical branches didactically and in the hospital, it is evident that two years from now the medical school should be organized. The general plan of this organization has, we believe, not yet been even seriously discussed by the University trustees; and it would be premature to say aught concerning it here.

The cost of the hospital appears at first sight enormous for its size. It is intended, we believe, to contain only three hundred beds: so that it will average forty thousand dollars per bed. This will no doubt give rise to criticism. The curse of stone has blighted so many institutions that it seems as though there were danger here. The wise provision made by Mr. Johns Hopkins that income only should be used for building-purposes will, however, prevent any injury to the capital, so that the worst that can happen is a delay of two or three years. There is, moreover, a good deal of justification for the proposed outlay. The hospital is to be not only a refuge for the sick, but also a centre of progress for scientific medicine. There will accordingly be an elaborate and costly pathological department, and all forms of special wards and arrangements, etc. The preparation for dispensary service also will be very extensive. Apartments are to be made for twenty-five resident pupils, so as to give as great a number as possible the advantages of practical study, and also to furnish an abundant supply of clinical clerks, registers, etc. It is plain that this educational feature will add much to the cost of the structure; but there is a still more important special cause for expense. It is very naturally desired that there shall be some handsome memorial building to Mr. Hopkins. The site of the hospital is on a high hill in the outer part of Baltimore, as it were standing over, and plainly in view of, the main city. Hence it is admirably adapted to memorial purposes. The income of the hospital is at present, and probably will be for some years, much larger than that of the University. For all these reasons it has, we think, been very properly decided to make an imposing front to the hospital, chiefly formed of the administration building, in memoriam, and to build the University buildings of brick in the simplest manner.

Few trusts seem to us so fortunate as that under consideration, especially in the hospital department. The wisdom of the University trustees is yet largely to be tested. But the extreme caution and good sense which have characterized the action of the trustees of the hospital, under the leadership of their president, Mr. Francis T. King, cannot be too highly praised.

CORRESPONDENCE.

LONDON LETTER.

IT may be well to commence with the second lecture of Prof. Ferrier before the Royal College of Physicians. In this lecture he reviewed the lesions of the motor area. This area, as ascertained by experimentation on the monkey, includes the bases of the three frontal convolutions with those bounding the fissure of Rolando. Stimulation of this region produces, according to the points touched, movements of the arm, leg, mouth, etc., and destruction of them causes paralyses of all those movements if the entire region be destroyed, and limited or disassociated paralysis if individual areas only be destroyed; the paralysis in this case being confined to those movements which are excited by irritation of the same. This region is supplied by four or five branches of the middle cerebral artery, each branch supplying a certain special area. And the arrangement of these vessels is such that the cortical branches may be blocked by emboli while the inosculations maintain the basal ganglia intact; consequently, softening of the gray matter may and does take place while the basal ganglia remain absolutely intact. The lesions which affect this region may be divided into the destructive and the irritative. Destructive lesions of this area cause paralysis of voluntary motion. In some cases of tumor in this area without loss of motion it has been found that the gray matter was not destroyed, but pushed aside. In lesions produced experimentally on monkeys, paralysis was produced without affection of sensation on the opposite side. Those parts whose movements were most voluntary and least automatic were most affected; thus the arm more than the leg, the hand than the arm, while the muscles of the trunk were least affected. The subject was rendered still more lucid by a number of illustrative diagrams. The lecturer then proceeded to quote cases of cortical disease, as well as traumatic lesion, in man, which corroborated the results attained in monkeys. The paralysis so induced is frequently associated with rigidity or convulsive spasm of the paralyzed parts, particularly in the early stage; and if destruction of the cortical substance is complete, the paralysis is of permanent duration, and sooner or later is followed by late rigidity and secondary sclerosis of the motor tracts. This degeneration of the motor tracts can be traced down the medullary fibres, crus, pons, and pyramid of the medulla, and thence mainly to the opposite side of the spinal cord in the posterior portion of the lateral column. Such secondary degeneration has been found to follow complete destruction of the cortex in dogs. Cases were then related showing that destruction of the cortex in this area led to permanent paralysis with late rigidity. The early rigidity with muscular spasms which so frequently accompany hemiplegia with effusion into the lateral ventricles is essentially due to irritation of the fronto-parietal fasciculi of the centrum ovale.

The lecturer then proceeded to discuss partial lesions of the motor area. He said that more or less complete hemiplegia of the opposite side did not always involve the whole of the motor area. There was no difficulty in accounting for complete hemiplegia in connection with very limited lesions of a *sudden* character in the motor area, such as hemorrhagic extravasation or a traumatic lesion. In time, however, the symptoms generally disappear, with the exception of those attributable to the part immediately destroyed or irritated. Partial lesions and monoplegia are limited paralyses corresponding to limited lesions of the cortex, of which several cases carefully recorded by different observers were related. In the case, he said, of the bilateral and antagonistic movements of the head and eyes, it would be natural to look for lateral distortion should the centre in the hemisphere be suddenly removed; and the distortion would be towards the side of lesion, owing to the unantagonized centre which remains. This affords a satisfactory explanation of the conjugate deviation of the head and eyes observed in the early stages of hemiplegia, whether of cortical or ganglionic origin. Certain facts, however, exist to show that this lateral movement of the eyes may be paralyzed singly, or thrown into spasms singly, constituting a unilateral monospasm. In a case where there was most remarkable rotation of the head and eyes to the right, without other contraction or paralysis, a lesion the size of a franc piece was found on the superior part of the middle frontal convolution of the left hemisphere (Chouppe). Then the question of paralysis of the leg was next discussed. From experimentation on the monkey, it would appear that irritation of the upper extremity of the ascending frontal, as well as part of the ascending parietal convolution, produces movements of the leg; that of an area near it, to movement of the tail. Now, in man the hand does much which the tail does in monkeys, and therefore it is necessary to be cautious about applying these results to man. Clinical evidence in favor of distinct centres for the leg and arm, as differentiated from each other, is not yet very extensive. As to these centres lying near each other, the common every-day experience of every practitioner as to leg and arm paralysis occurring together left no doubt as to the fact. A Danish corporal was struck by a shot at the inferior and posterior extremity of the left parietal bone, close to the sagittal suture overlying the postero-parietal lobe. The right leg was immediately paralyzed. The right arm became affected on the seventh day. On tre-

phining, recovery took place,—the arm first, and then the leg. This, he said, may fairly be taken as a cortical lesion, as the subsequent affection of the arm is in accordance with extension of softening to neighboring centres, a feature characteristic of cortical lesions. Another case of fracture of the summit of the right parietal bone by a shot was followed by paralysis of the left leg. In another case, disease at the upper part of the right hemisphere was followed by paralysis limited to the left leg. Other cases were related which went to prove very conclusively that lesions producing crural monoplegia in man were found at spots closely associated with the centres for movement of the legs in monkeys. The lecturer then proceeded to review lesions associated with paralysis of the arm. The centres for the movements of the arms occupy a large area, as might be expected from their importance as organs of intelligence. In a case where the left arm alone was paralyzed, the lesion was situated in the ascending parietal convolution on the right side. Then he related cases of atrophy of certain brain-centres following amputation of a limb. Thus, a case was reported by Chuquet where amputation of the right arm six years before death was followed by atrophy of the upper third of the ascending parietal convolution and corresponding part of the internal surface of the hemisphere. In a case of congenital absence of the left hand, the middle part of the ascending parietal convolution in the right hemisphere was much smaller than the corresponding convolution on the left side. Then as to brachio-facial monoplegia, a case was related where a woman was suddenly seized with paralysis in the right arm and right lower facial region. A hemorrhagic extravasation, the size of a nut, was found in the ascending frontal convolution of the left hemisphere. Then aphasia was discussed, and differentiated from oro-lingual paresis. Aphasia was, as was well known, connected with lesions in Broca's convolution. Aphasia in its true meaning was not speechlessness, but the inability to express thoughts in articulate speech, or to think in words. It was not contended that there was an absolute restriction of the speech-centre to the left hemisphere. It was a significant fact that in several cases of aphasia, connected with a lesion in the right hemisphere, the patients were left-handed. A case of bilateral lesion had been put on record by Dr. Barlow. A boy aged ten, with aortic disease, was seized with right hemiplegia, chiefly brachio-facial, and aphasia. Of this he had apparently recovered at the end of a month. Three months later, he was seized with left brachio-facial monoplegia. This time there was not only aphasia, but also paralysis of all voluntary movements of the mouth and tongue. Reflex deglutition was unimpaired. There was no loss of sensation in the paralyzed parts, and the muscles acted normally to the faradaic current. The intelligence was good, and comprehension fair. On post-mortem examination, a lesion was found in each hemisphere, and in exactly corresponding situations. The region involved in the lesion was the lower end of the ascending frontal and the hinder end of the middle and inferior frontal convolutions. Other cases were related which showed that the clinical evidence alone is amply sufficient to establish the relation between aphasia and lesion of Broca's region as an empirical generalization; but the facts of experimental physiology, and the light they throw on the motor substrata of mind, show that the connection between lesion of Broca's region and aphasia is no longer merely an empirical generalization, but a derivative law, established, in his opinion, on as firm grounds as any other fact in scientific medicine.

As to the diagnosis of cortical lesions, it was stated that it was not always clearly distinguishable betwixt lesions of the motor area of the cortex and those of the corpus striatum, more especially those involving the anterior two-thirds of the internal capsule. In each case the parts most paralyzed are those most volitional. The arm is more paralyzed than the leg; the hand than the arm. The sensation is not affected by a lesion confined to the motor area. The late rigidity which follows paralysis is due to degenerative changes going on in the motor tracts connected with the seat of the lesion. The temperature of the paralyzed limb in cortical paralysis is not markedly altered. In cortical affections a hemiplegia will often resolve itself into a monoplegia, as, for instance, a patient has hemiplegia and recovers all but the use of the hand. Cortical paralysis is often erratic and transitory, more especially in connection with superficial meningo-encephalitis, appearing and vanishing, first on one side and then on the other. According as the lesion is superficial or deep and invading the whole depth of the cortex and subjacent medulla, do we get transitory paralysis, or a paralysis which remains permanent and followed by descending sclerosis and late rigidity. Early rigidity is of frequent occurrence in cortical disease, and rare in central cerebral disease. Consciousness is less frequently lost in cases of sudden cortical lesion than when similar disease occurs in central ganglia. Cortical lesions are frequently associated with localized pain in the head, and, in his experience, where pain was not already present it could be brought out by percussion over the seat of lesion.

Irritative lesions of the motor area are indicated by localized spasms, which may run into a unilateral convulsion. They are due to irritability or hyperæmia of the cortical gray matter or subjacent medullary tracts, or to local disease. According to Hughlings

Jackson, the lesion causes the centres to become charged to a state of high tension, so that, under certain vital conditions, they discharge themselves in a sudden and explosive manner, and become exhausted for the time being: hence the consequential temporary loss of power in the affected parts. An irritative lesion may proceed to permanent destruction of the part with permanent paralysis and secondary sclerosis. "Jacksonian epilepsy" has, in its early stages, often the character of a monospasm. When the convulsion becomes bilateral, as is sometimes the case, the spasms are reversed in order; that is, if the first pass from the leg to the face, they descend on the opposite side, and *vice versa*. The lecturer then related a number of cases showing that localized spasms were connected with definite lesions in their corresponding motor areas.

Lesions of the sensory regions formed the first subject of the third lecture. He pointed out how experiment had led to the conclusion that sensation was located in the occipital and parieto-temporal lobes. He had considerable doubts as to the trustworthiness of anatomical localization: it was valuable taken along with other evidence. When the occipital lobes in the monkey are destroyed, the animal ceases to eat, an occurrence not seen in destruction of any other part of the brain, and therefore in his opinion associated causally in some way with this lesion. Lesions of the occipital lobes are, as a rule, *latent*. Up to the present time facts do not enable us to generalize with certainty as to the special effects of lesions of the occipital lobes. The remainder of Prof. Ferrier's last lecture will be given briefly in the next letter. Schroeder van der Kolk and Laycock both asserted that the occipital lobes are in connection with our systemic sensations, our sense of well-being or of not feeling well. They are supplied by the basilar artery before it reaches the circle of Willis, and have a vaso-motor supply to their blood-vessels apart from the other portions of the brain. Consequently it has been stated that conditions of low spirits or depression amounting even to melancholia, where the intellectual powers are not implicated or impaired, are due to morbid conditions of the occipital lobes. It will be interesting to learn what Prof. Ferrier has to say about this.

An important discussion has gone on at the Pathological Society on the Diseases of the Lymphatic System. Dr. Samuel Wilks commencing by giving an account of the original specimens of Dr. Hodgkin, which were exhibited. They consisted of enlarged glands in different parts of the body. The enlargement of these glands was a primary and not a secondary change. It consisted of a general hypertrophy of all the tissues of the glands, without any tendency to suppuration. There were usually changes in the spleen, which were neither cancer nor scrofulous disease. The disease, however, had malignant characteristics, as these enlarging glands had been known to eat their way into the trachea and bronchi. There was no leucocythæmia in Hodgkins' disease. Dr. Greenfield described leucocythæmia and lymphadenoma, pointing out how essentially different they were. In only one of his thirteen cases of lymphadenoma was leucocythæmia present. He described the high temperature which was found in cases of enlargement of the glands. Subsequent speakers brought forth cases and observations which showed conclusively that these two maladies were distinct from each other, even though they might be found together. Such a case was related by Dr. R. O. Jones, where there was great enlargement of the axillary glands, and high temperature. When the blood was examined under the microscope, the white blood-corpuscles were found in great excess. The temperature rose to 101° F. in the morning, and 103° in the evening. There was persistent diarrhœa. The leukæmia he thought was not due to the growths, but to defective formation of blood-corpuscles. Sir William Gull related the clinical history of the case of an eminent nobleman who died a few years ago with increasing languor and anæmia. All treatment was inoperative. The whole history of the case was negative. In consequence of the absence of obvious cause of the condition of anæmia, Dr. Dickenson was asked to perform the post-mortem. The necropsy was as negative in its results as the clinical history. The only disease was in the blood itself. It was a case of pernicious anæmia. There are three conditions, then, quite separate from one another,—lymphadenoma, leucocythæmia, and idiopathic anæmia. Sir William Gull made the statement that when the spleen became enlarged in malarial disease, the pyretic attacks ceased.

PROCEEDINGS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, FEBRUARY 14, 1878.

THE PRESIDENT, Dr. H. LENOX HODGE, in the chair.

Abscess of liver, and empyema. Presented by Dr. E. T. BRUEN.

JOSEPH DONNELLY, æt. 22, single, was admitted to the Philadelphia Hospital November 2, 1877. He complained, on admission, only of indigestion and malaise, which he had noticed for two weeks. He had always been a healthy man; he had never suffered from syphilis; his occupation had been that of a laborer. His family history was imperfect, as he had not seen his parents for some years.

On examination of his chest, which I made as a routine practice, my attention was arrested by the marked accentuation of the second sound of the heart over the aortic valves. This led me to make a careful examination, and I found there was dulness upon percussion on the right side of the chest in the axillary region, from the sixth rib to the base of the chest, extending anteriorly to within two inches of the nipple-line; beyond this point the dulness usually occasioned by the presence of the liver was noted, which dulness extended, however, nearly an inch and a half below the margin of the ribs; there was no movement of the liver upon forced inspiration. Over the remainder of the anterior portion of the chest good resonance could be obtained. Posteriorly the dulness in the axilla extended to the angle of the scapula; elsewhere there was resonance. The respiratory murmur over the resonant region was feeble; over the dull portions of chest, very faint and distant.

Upon the left side nothing unusual was noted. On the 8th of November, a swelling was observed on the right side, including a space over the seventh, eighth, and ninth ribs, which was painful on pressure. He suffered especially if the ninth or tenth rib was pressed upon from behind, the pain being located anteriorly near the position of the swelling. I inferred that the ribs last mentioned were diseased. At this time he commenced to expectorate purulent matter with cough, and his temperature, which had been normal, with the exception of the day of his admission, when it was 102° F., rose to 100° F. The expectoration came up in large amount, several mouthfuls at a time, mostly when he was in the recumbent position. Sometimes he would pass the entire day without expectoration, again would be choked by it.

From the 9th to the 16th, he suffered from hectic and sweating, temperature ranging from 99° to 104°. On the 16th, believing there was a purulent collection in the pleural cavity, or in the liver, an exploring needle of an aspirator was introduced into the ninth interspace at seat of pain and swelling, selecting this position on account of the doubt in the diagnosis. Simply a bloody fluid was obtained. On the 21st the needle was again introduced through the eighth interspace, and eight ounces of pus removed, and the cavity injected with a dilute solution of Lugol's iodine, gtt. x to f℥i of water. The external swelling, however, still increased, and the hectic was unchanged.

About the 29th, there appeared to be a circumscribed pneumothorax at the position mentioned above, as amphoric breathing and tympanitic resonance replaced the dulness. On the 29th, therefore, he was etherized, and my colleague, Dr. J. Wm. White, cut down upon the swelling and introduced a rubber drainage-tube in the eighth interspace, at the anterior border of the axillary region, and brought out the tube in the same interspace, about four inches posteriorly. Very little pus was evacuated at the time, for most of it had been previously expectorated through the bronchial tube. The operation was more difficult than is usual, on account of the infiltration of the thoracic wall.

For the following three weeks the hectic was checked, and the patient gained in flesh and strength, becoming able to walk about the ward; the temperature being always below 100° F.; no sweating. Drainage at first took place freely, and for the last two weeks in December in diminished amount. The cavity was injected daily with dilute solution of iodine (Lugol's solution) or carbolized water, coughing never being occasioned unless the solutions were made strong of iodine. He always tasted the substance with which he was injected. The incision into the chest-wall, made to introduce the tube, healed completely, the infiltration disappeared, and he seemed to be doing very well. His appetite and digestion also improved decidedly, but occasionally he would suffer from attacks of hiccough. After the 17th of December, however, his temperature rose every night to 101° F., and he ceased to improve.

January 1, he passed out of my hands, as my term of service expired, and he died of acute pleurisy on January 6, 1878.

Post-mortem examination.—Upon opening the chest, the right pleural cavity was found to be completely filled with a recent pleuritic effusion, sero-fibrinous in character, the lung occupying the lower portion of the pleural cavity, near the diaphragm and vertebral column, and flattened to about the size of a man's hand. It was bound down in this position by adhesions. The fifth and sixth, eighth, ninth, and tenth ribs were found to be diseased; the chest-wall over the lower ribs was very much thickened, and contained a small amount of pus, which was confined by adhesions between the liver and the diaphragm. An opening through the diaphragm allowed this pus to communicate with the lung or the pleural cavity. The drainage-tube was found at this place surrounded by the lung, which had been compressed upon it by the recent pleurisy, the compression being aided by adhesions. In the upper part of the right lobe of the liver there was an abscess about the size of an orange, the cavity of the abscess being distended with contained pus, and which communicated with the abscess in the thoracic wall by an opening which was so small and tortuous that the abscess did not empty itself. The remainder of the liver-tissue was soft and fatty. The intestinal canal was examined throughout, but found healthy. The kidneys were nearly normal, though slightly fatty.

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Remarks.—The improvement of the patient's condition after the drainage-tube had been introduced is worthy of attention. The hectic for several weeks was totally checked. The cavity appeared to grow smaller during the treatment by injections, for at the time of the operation a probe could be moved about readily in different directions. As previously stated, an hepatic abscess was suspected at first. The even range of the temperature for so long a time was favorable to this hypothesis. Dr. Murchison states that cases of hepatic abscess are often mistaken for remittent fever on this account.

The liver itself, though extending an inch and a half below the ribs, was stationary when a full inspiration was taken, which Frerichs considers an important evidence of empyema, as in abscess of the liver the descent of the diaphragm on inspiration will depress the liver. The physical signs and expectoration appeared to indicate an empyema with perforation into a bronchial tube.

The disease of the ribs I always suspected was the cause of the empyema, but from the absence of any history of local injury, or of syphilis, I could not feel sure the disease was not secondary. In the light of the post-mortem, it appears to me the sequence of these lesions was first the abscess in the thoracic wall, which caused, by extension of inflammation, an abscess in the liver, which abscess subsequently perforated the diaphragm and pulmonary tissue and was expectorated through the bronchial tube, the empyema being a separate lesion, or else the empyema resulted from the perforation of the diaphragm, really being a part of the first abscess.

I have read recently some interesting cases in the *London Lancet* for November 17, 1877, reported by Dr. Fenwick, of abscess of the liver perforating the diaphragm, and being expectorated, with symptoms very similar to this case.

There is one other consideration in reference to the abscess which it is only right should be stated, viz., the possibility that at the time of the first puncture, when I obtained only blood, the liver was penetrated. But I claim that the operation, even with this risk, was justifiable, because there was distinct fluctuation where the needle was introduced. If the abscess in the liver had been reached by the aspirator, a cure might have resulted.

Dr. GUITÉRAS said that this case was admitted to the Philadelphia Hospital soon after the death of the case of abscess of the liver, presented by him to the Society some weeks ago. For a time the temperature of Dr. Bruen's patient ran a remarkably regular course, like to a malarial fever. This, you may remember, was a marked feature of his own case. In the present instance he never gave up the diagnosis of abscess of the liver, though the symptoms became subsequently masked by the disease of the ribs and of the pleura. The very low position of the pain and tenderness also pointed to abscess of the liver. It would have been interesting to study this case in the light of the observations made by Fenwick (*London Lancet*, November 17, 1877). He reports several cases where liver-substance was found in the pus discharged from abscesses of that organ. Liquefying the pus by adding a little ammonia, he found in the sediment the liver-cells more or less disintegrated.

Some time ago Dr. G. reported to the Society that since July of 1873 there had been in the men's medical wards of the Philadelphia Hospital eighteen deaths from empyema; that in every one of these cases the operation of paracentesis had been performed more than once; that in some of them different operative procedures had been tried; that in the great majority of them the effusions, primarily serous, had been converted into purulent by the operation; that, excluding the operations for passive effusions, these eighteen cases included the great majority of those operated upon within this period, since the most careful search failed to find more than three successful results; one was of traumatic origin, the other was a comparatively recent effusion, and the third he knew nothing about. In these three cases the effusion never became purulent.

Within the last eight months the operation has been performed in two cases; this is the second one; the first also terminated fatally; a third one is now at the point of death in his wards of the hospital (and has since died).

He did not think the atmosphere of the Philadelphia Hospital was a bad one. With a population of nearly 4000 in the whole institution, it may be said that septic diseases do not prevail there; diphtheria never; typhoid fever very seldom originates in the house; and when introduced, they do not tend to spread. He thought pyæmic infection was not frequent in the surgical wards. An obstetrical department is out of place in an institution of this kind, and it is no wonder that septicæmia prevails there. Our patients do not get the best of diet, and they are frequently men broken down by excesses; yet the influences of these degradations of the constitution are not shown to such a fearful extent in other diseases.

This operation is a rational one. He knew it had been very successful in the hands of some, specially Dieulafoy, who has given particular attention to all the details; but, as usually performed, it needs perfecting, and we will never perfect it if we deceive ourselves as to its dangers.

Dr. STARR said that, in regard to the results of the operation of paracentesis thoracis, the experience of Dr. Guitéras in the wards

of the Philadelphia Hospital did not correspond with his own at the Episcopal Hospital, since, so far as he remembered, nearly all of quite a number of operations performed during his connection with the latter institution had been successful; in some instances a permanent cure resulting, while in other complicated cases, where no termination but death could have been expected, great relief was afforded, and life unquestionably much prolonged. Not to multiply examples, during his last term of service several patients were subjected to the operation. From one case of acute pleurisy, with effusion in the left pleural cavity, a considerable quantity of serous fluid was withdrawn; the man's condition improved rapidly, and he left his bed convalescent in ten days. When discharged, a month afterwards, there were no evidences of fluid in the pleural sac, nor were there any six weeks later, when he visited Dr. Starr at his office, although he had undergone much exposure in the interval.

The second patient had been tapped upon several occasions for empyema of the left side, and had worn a drainage-tube. When admitted to the hospital he was very weak and emaciated, and suffered from hectic fever, profuse night-sweats, and cough; there was a slight purulent discharge from an opening in the seventh intercostal space, through which the drainage-tube had been passed, and upon introducing a small flexible catheter about six ounces of pus, having a faint disagreeable odor, flowed away. For some time the pleural cavity was washed out through this opening, without much improvement in either the local or constitutional condition. Subsequently a free opening was made into the pleural cavity in the eighth interspace, a drainage-tube introduced, and the cavity washed out daily with a weak solution of carbolic acid. After this the improvement was rapid, and at the present time there is little or no formation of pus, no hectic fever, night-sweats, or cough, and the patient has gained more than fifteen pounds in weight, and feels well and strong enough to work. Here, of course, the ultimate result is still doubtful, but the prospect is bright.

In a third case, one of pneumo-pyothorax occurring in the course of phthisis, the left chest was punctured twice, and a large quantity of pus evacuated: first operation, November 18, thirty-six ounces; second, December 18, sixty ounces. In this case the operations were undertaken to relieve distressing symptoms, and were more than satisfactory in their results. He thought, therefore, that a sweeping condemnation of the operation was unjustifiable.

Dr. LONGSTRETH thought that diagnosis of abscess of the liver, by examination of the pus during life, was very uncertain. There was a case some time since in the Pennsylvania Hospital which presented the symptoms of an abscess of the liver. The pus was drawn and examined, but from the character of the cells no conclusions could be determined upon. Dr. L. did not think the method of Fenwick could be borne out, since in an abscess of the thigh we do not find muscular fibre. With bone it is different, as we find calcareous particles; but we cannot say they are bone-cells.

Dr. GUITÉRAS said he did not think any doubt could be thrown upon the value of these observations. Fenwick goes even so far as to attach prognostic value to them. When the liver-cells are found in abundance, the breaking down of liver-substance is progressing, and the prognosis is unfavorable; when they are absent or very much disintegrated, he has found the result more favorable. In a case of suppuration of a cyst, he only found the calcified remnants of hydatids.

Those cases in which a spontaneous opening occurred externally, he believed, do better than those operated upon. Whilst this fearful mortality has been going on in the wards of the Philadelphia Hospital, he has had under observation, in the same wards, for four years, a case of empyema with an external fistula which died a few weeks ago of pericarditis, with pneumonia of the healthy side.

The operation is more favorable in children, probably on account of the elasticity of the chest-walls. All the cases he had reported were adults, and their histories were followed out to the end. Unfortunately, this is not always done, and many incomplete histories are published as cures. He believed also that in this, more than in any other serious operation, the unfavorable results did not reach the light.

GLEANINGS FROM EXCHANGES.

THERAPEUTICAL VALUE OF QUINETUM (*The Practitioner*, February, 1878).—As the result of a practical inquiry into the actions and uses of quinetum, Dr. H. J. Vinkhuysen has come to the following conclusions:

1. The only malarious disease in which quinetum cannot be employed in place of quinine is pernicious fever. Quinetum requires more time to act than quinine, and, as rapidity of action is absolutely necessary in this disease, quinetum cannot be used in it as a substitute for quinine.

2. In all forms of pure malarial intermittent fever, quinetum has the same apyretic effect as quinine, but is less powerful, and acts more slowly. It must therefore be given in larger doses and at longer intervals before the ague fit than quinine.

3. Quinetum does not produce the unpleasant and even dangerous symptoms of quinine when given during the fit, and may be taken

at that time without causing any unpleasant feeling.

4. Quinetum never causes noises in the ear.

5. Persons who are liable to suffer from the toxic effect of quinine, and who, therefore, cannot take it without the greatest discomfort, can take quinetum without this unpleasant effect and yet obtain a similar therapeutic result.

6. The influence of quinetum in chronic cases is greater than that of quinine.

7. The tonic action of quinetum is similar to, and perhaps even greater than, that of quinine.

8. The action of quinetum in cases of masked or larval malaria, and especially in rheumatic affections due to malarious influence, is incomparably greater than that of quinine.

CÆSAREAN SECTION (*The Clinic*, February 23, 1878).—Dr. George E. Walton reports, at some length, a case of Cæsarean section in which the child was saved, but which resulted unfavorably to the mother, and from which, together with an elaborate review of the subject, he draws these conclusions:

1. In the case reported, Cæsarean section was justifiable, as the result proved.

2. Cæsarean section should be resorted to in all cases where the antero-posterior diameter of the superior strait is two and one-half inches or under and gestation has advanced to the ninth month.

3. Every effort should be made to perfect the operation of Cæsarean section, and its use in the cases mentioned encouraged.

4. Craniotomy should be discouraged, and its use restricted to the narrowest possible limits.

THE LOCAL USE OF SOLUTION OF QUININE IN CHRONIC IRRITATION OF THE BLADDER (*The Lancet*, February 23, 1878).—Mr. T. W. Nunn has been using quinia locally for some years as an antiseptic, a bactericide, and in some forms of venereal sores. He says, however, that, so far as its local use is concerned, the most striking result is obtained by injecting the solution of quinine into the bladder in those cases where the urine is loaded with pus and is *intensely offensive*, the bladder being irritable, the desire to urinate recurring every hour, or more often, for example, where the bladder only imperfectly empties itself, or when the continual use of the catheter is called for in enlarged prostate, or in atony of the organ. Mr. Nunn has recently been informed by a patient who has habitually had recourse to the catheter,—the urine voided being alkaline and highly offensive,—that the injection of the quinine solution has been followed by such an abatement of the sensitiveness of the neck of the bladder that the desire to micturate comes on now only after the lapse of six or seven hours, in place of after the lapse of every hour or every hour and a half.

The following is the method of using the quinine as a bladder injection. Dissolve twenty grains of disulphate of quinine in twenty-five ounces of water by the aid of a few drops of dilute sulphuric acid or a teaspoonful of *common brown* vinegar. Of this solution inject into the bladder two or three ounces, and let it remain.

MISCELLANY.

EDUCATIONAL ENCOURAGEMENT IN GERMANY.—The budget of the German Empire for the current year comprises several important sums destined to promote the advance of knowledge in various departments of medical science. Among the principal we note 90,000*l.* for an ethnological museum; 85,000*l.* for the establishment of new clinical courses; 60,000*l.* for a pharmaceutical institute and its dependent laboratory. In addition to these, but in one instance less directly connected with medical science, are grants of 400,000*l.* for the erection of a polytechnic school, and 57,000*l.* for new clinical courses.—*Medical Examiner.*

THE LATE DR. FRANCIS GURNEY SMITH was born in 1818, in this city. During a protracted professional career he filled successively a number of our most important hospital positions, and became widely known as an excellent and successful clinical teacher. He also enjoyed for many years an extensive practice among the best circles of our city, for which he was indebted not only to his professional skill, but also to a courtesy of manner remarkable even among those most cultured and finished in this particular. It is chiefly, however, as a teacher of physiology that he has claims to public recognition. In 1842 he entered upon this portion of his career in a private association, and in 1852 he was elected professor in the now defunct Pennsylvania Medical College. In 1863 he succeeded Prof. Jackson in the University of Pennsylvania, which position he held until his resignation was necessitated last year by failing health. As a lecturer, Dr. Smith was always exceedingly clear and forcible, and was especially characterized by the elegance of his diction and delivery. During the course of his life Dr. Smith performed a large amount of editorial labor, partly in the adaptation of various foreign works for the American market, and partly in the line of journalism. During the last years of his life he was engaged upon a general treatise upon physiology, which he was finally forced, by failing health, to abandon. Among his occasional contributions to periodical literature, his experiments upon gastric digestion in the case of the notorious Canadian, Alexis St. Martin, are foremost in permanent value.

NOTES AND QUERIES.

HOMŒOPATHY AGAIN.

No. 1835 Chestnut St., Philadelphia, April 22, 1878.

To the Editor of the Philadelphia Medical Times:

Dear Sir,—The guarded, yet strangely significant, *vote of want of confidence* in the doctrine of Similia similibus curantur, lately passed by the New York Homœopathic Association, and reported in your last issue, can scarcely fail to undermine the faith of many of its dupes in this great foundation of homœopathy. It therefore seems an appropriate time for me to present in your columns a suggestion offered in my recent introductory lecture on "Medical Skepticism and Medical Superstitions," at the University of Pennsylvania, trusting that it may contribute to shake simultaneously that other chief abutment of the system, *a belief in the power of infinitesimal doses*, and so, perhaps, aid to realize the anticipation that homœopathy, as a blot upon the boasted intelligence of the present age, will be obliterated before the end of our century.

My proposition is contained in the following extract:

In dealing, as you will frequently be called upon to do, with the great medical superstition of our own day, I would recommend you not to ridicule, still less to abuse homœopathy, to its adherents, but quietly point out to them that, since it claims to rest its principles solely upon observation, the way to test the reality of these claims is to observe its effects upon some individuals who are not prejudiced in favor of the system. If the fairness of this proposition is admitted, as it probably will be without hesitation, at once defy your interlocutor to give you any homœopathic medicine which will produce any effect whatever upon your organism. The only stipulation you need make is, that you shall see with your own eyes the drug selected, reduced to its fourth or fifth centesimal dilution; and no additional danger is incurred by allowing the direction of Hahnemann in his Organon, that the vial in which the successive dilutions are performed shall be shaken, "twice only, first carrying the arm up and then down," to be strictly carried out. I have myself offered this challenge to at least a hundred devotees of homœopathy, including several so-called physicians, and though it has several times been accepted, with the triumphant alacrity so common among experts in the game of bluff, *somehow or other*, *something* has always, thus far at least, prevented them from carrying out their part of the agreement, so that none of them have ever yet dared to try the proffered experiment upon my stomach. Perhaps I should just remind you that the authorized formula for preparing homœopathic medicines is to take one drop of the mother tincture, for example, tincture of aconite, and shake it with ninety-nine drops of alcohol, thus producing the first dilution or first potency; next, take one drop of this diluted tincture (of the strength of one per cent.) and shake it with another ninety-nine drops of alcohol, giving us the second dilution or potency; which you observe is of a strength, or rather weakness, equivalent to one drop of the original tincture in ten thousand drops of pure alcohol. The third dilution is obtained by a repetition of the same process, and so on indefinitely, the twenty-fourth dilution having, according to the late Prof. Sir James Simpson, a strength equal to one grain of the original drug, dissolved in an ocean of fourteen quintillion cubic miles of alcohol, or a quantity sufficient to make one hundred and forty masses, each extending from limit to limit of the planet Neptune's orbit. It will doubtless do away with any natural hesitation you might feel out of consideration for your own valuable digestive apparatus, in offering my defiance as above advised, to know that the fifth dilution has a strength about equal to one grain (of morphia, for example) dissolved in five thousand barrels of alcohol. Since the solution of one drop of concentrated hydrocyanic (prussic) acid, probably one of the deadliest poisons known, to a single barrel of fluid, could be taken with impunity in doses of a quart or more, there is no doubt that this fifth centesimal dilution of aconite, belladonna, nux vomica, or any other homœopathic remedy, being, as just stated, a mixture in the proportion of one grain or drop to about five thousand barrels of alcohol, may be looked upon as a pre-eminently safe preparation; only be sure, gentlemen, that the alcohol employed is pure, and contains *by accident or otherwise* no poisonous ingredient.

Of course, the failure of a disciple of Hahnemann to produce any effect upon you with any of his medicines gives you a crushing argument against his so-called system of cure; and indeed who can say that an organized effort on our part to systematically and persistently wring from devotees of homœopathy such tacit admission of the utter impotence of all their boasted infinitesimal doses, might not hasten the downfall of this gigantic medical delusion, and, by establishing the literal downright truth in regard to one of its fundamental dogmas, help to wipe out the blot which it constitutes upon the intelligence of the nineteenth century, even before our own generation passes away?

Many professors of homœopathy claim to produce, as did Hahnemann himself, more powerful effects from the high than from the low dilutions; but the truth is, as I believe, that when any effects (which are not merely apparent, and the results of imagination, coincidence, etc.) do occur, they follow the fraudulent administration of ordinary officinal doses of our usual medicines, a deception for which the homœopathic druggists provide, by selling what they call decimal, instead of centesimal, dilutions and triturations of potent drugs, such as morphia, arsenic, strychnia, etc., the first of which dilutions contains one grain of drop of the "remedy," to every nine grains or drops of the vehicle employed.

Here for example I show you a bottle, which I myself purchased some years since at a homœopathic pharmacy, purporting to contain the second decimal trituration of acetate of morphia. Of course any individual who took five grains of this powder every half-hour for two hours would swallow (unless it is a double, instead of a single fraud) about one-fifth of a grain of the salt of morphia; that is, rather more than our own customary full dose for an adult.

Hoping that this plan of investigation may appeal not only to members of our own profession, but even to followers of homœopathy who are not yet so blinded as to be no longer seekers after Truth,

I remain very respectfully yours, etc.,

Jos. G. Richardson.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U. S. ARMY FROM APRIL 21 TO MAY 4, 1878.

Head, J. F., Lieutenant-Colonel and Surgeon.—Assigned to duty at Boston, Mass., as Attending Surgeon and Examiner of Recruits, and upon arrival there report by letter to the Commanding General, Division of the Atlantic. S. O. 85, A. G. O., April 20, 1878.

Hammond, John F., Lieutenant-Colonel and Surgeon.—Assigned to duty as Post-Surgeon at Fort Adams, R.I., relieving Surgeon Campbell. S. O. 71, Department of the East, April 24, 1878.

Campbell, J., Lieutenant-Colonel and Surgeon.—Relieved from duty in Department of the East, and to report in person to Commanding Officer, Department of the South, for duty as Medical Director of the Department, relieving Surgeon Head. S. O. 85, c. s., A. G. O.

Alexander, R. H., Major and Surgeon.—Having relinquished unexpired portion of his leave of absence, to report in person to the Commanding General, Department of the East, for assignment to duty. S. O. 85, c. s., A. G. O. Assigned to duty as Post-Surgeon at Fort Trumbull, Connecticut. S. O. 71, c. s., Department of the East.

Randolph, J. F., Major and Surgeon.—Relieved from duty in Department of the East, to proceed to his home, and report his arrival by letter. Authorized to remain there on monthly certificate of disability until his health is sufficiently restored to resume duty. S. O. 90, A. G. O., April 26, 1878.

Yeomans, A. A., Captain and Assistant-Surgeon.—To proceed to Fort Griffin, Texas, relieve Assistant-Surgeon D. G. Caldwell, and receipt to him for all property, and on completion of this duty return to Fort Richardson, Texas. S. O. 89, Department of Texas, April 25, 1878.

Loring, L. Y., Captain and Assistant-Surgeon.—Assigned to duty at St. Louis Barracks, Mo. S. O. 85, c. s., A. G. O.

Turrill, H. S., First-Lieutenant and Assistant-Surgeon.—Relieved from duty at Fort Clark, and assigned to duty at San Felipe, Texas. S. O. 90, Department of Texas, April 26, 1878.

Comegys, E. T., First-Lieutenant and Assistant-Surgeon.—Relieved from duty at San Felipe, and assigned to duty at Fort Clark, Texas. S. O. 90, c. s., Department of Texas.

Perley, H. O., First-Lieutenant and Assistant-Surgeon.—Granted leave of absence for one month, providing he furnish proper medical attendance, at his own expense, at his station, Fort Pembina. S. O. 49, Department of Dakota, April 25, 1878.

Buell, J. W., First-Lieutenant and Assistant-Surgeon. Relieved from duty in Department of Texas. S. O. 86, A. G. O., April 22, 1878.